

Abstract: Transport of positive charge deposited by a corona discharge on the open nitride surface of a silicon nitride (150 nm)/silicon oxide (300 nm) double layer on silicon substrate is studied by determining the location of the charge centroid with a capacitance–voltage method used in conjunction with surface-potential measurements. At temperatures of about 400 °C, the charge is mobile in the nitride and a large part of it is eventually trapped at the nitride/oxide interface while some of the charge reaches the substrate through the oxide. Indications are that at this temperature the mean free path of positive charges in the nitride and oxide layers is comparable to the layer thicknesses, but much shorter in the nitride at lower temperatures.